WIT-108084

Rt Hon Sir Patrick Coghlin
RHI Inquiry
1st Floor, Waterfront Plaza
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21 December 2017

Dear Sir Patrick,

Clarification of points arising from oral testimony

In response to the queries that arose from the panel and Mr Lunny's questions on 30 November and 1 December 2017, I am pleased to write and address the points that I said I would take a further look at after consulting with colleagues.

By way of providing the context, I set out CEPA's replies below the relevant extracts (in blue type) from the transcripts, as follows:

2011 final report

Dr MacLean: This report is about four weeks on from the previous draft that we looked at. I'm just interested how we have moved from a do-nothing baseline of 4·8 to a do-nothing baseline of 7·7? And most other things have moved up by quite a significant number of percentage points. That seems a very big change in a relatively short period of time.

Mr Cockburn: Yes. There must be some modelling assumption that's driving that, but, off the top of my head, I couldn't tell you what it was. I mean, it's something we could look at for you, certainly.

As explained in a note provided to DETI titled *"DETI comments draft response 150611 - sent to DETI"* during the development of the 2011 report, CEPA increased the baseline renewable heat level based on the revised assumption that the Invista industrial site would switch to biomass without subsidy.

This assumption was considered in detail by the CEPA team as explained on p38 of the 2011 report:

"One large industrial site (Invista) is currently using coal. At current market prices for coal, this is a cheaper fuel source than gas. However, with a rising carbon price over the next decade under the Carbon Price Support mechanism, our initial analysis suggests that towards the end of this decade, the switch from coal to biomass would be economic or would require very low subsidy relative to other renewable heat technologies. We have therefore included this site in the category of those that do not appear to require further subsidy to switch to renewable heat.

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"This is only an initial analysis; we understand that a detailed analysis of the site's costs is underway in conjunction with the Carbon Trust. We recommend that DETI discusses this assessment further with Invista and reconsiders the question of subsidy for it and for other large industrial sites at the time of the first review of the RHI in 2013 or 2014."

Given its large size and influential impact, this was treated as a sensitivity option in the model (see row 42 of the Control sheet of "CEP-51347 - 2017-01-25 - 2011 model_v2.0") with the following assumptions set out from row 441 of the "Annual inputs" sheet.

Addition of Invista		**2020**
Include Invista	selection	TRUE
Invista heat output	GWh/year	342
ARR factor	percentage	123%
Invista ARR	GWh/year	422

For clarity, this figure of 422 GWh/year was around 2.5% of Northern Ireland's total projected heat demand in 2020. The inclusion of Invista in the category of those sites that would take renewable heat without subsidy would therefore cause a substantial increase in the expected percentage uptake without subsidy, as was seen in the reports and noted in the Inquiry's question.

Dr MacLean: But when you see such large variances in a relatively short period of time, does that not suggest that there may be some underlying sensitivities in what's being done that mean a relatively small change is having a marked effect on the outcome?

Mr Cockburn: I suspect it's the nature of the model, an uptake model, with different, you know — which is based on a population with different opportunities, with different characteristics, and I think when they change, then, or some assumptions change, then they can have significant knock-on effects.

Dr MacLean: But when you see that sort of movement, is that not something that would spark even an inquisitive mind to ask, "Well, what's gone on there?". Is that true or, you know, were you under pressure to produce numbers that showed the 10%?

Mr Cockburn: I couldn't tell you now. I mean, its — I mean, I can refer it back to the people who were involved and see if we can come up with something

As noted in the previous answer, the variation in the baseline renewable heat was largely driven by a single large industrial site in NI. My colleagues inform me that their recollection is that CEPA, AEA and DETI discussed this at the time, and so DETI would have understood the reason for the change.

As for the question about whether CEPA came under pressure from DETI to show the RHI delivering 10%, there is no evidence to suggest pressure to do anything unreasonable, However, DETI had already committed to the target and so was understandably keen to have a policy that looked like it might deliver. They certainly challenged CEPA on the assumptions – quite rightly.

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Phase 2 proposal

Mr Lunny: this is in a section, I should've made it clear, where you're setting out the work that you've done with DETI on RHI to date, and you refer to that in the first paragraph. In the second paragraph, at the very bottom of the page, you make it clear that Aecom/Pöyry did a report in 2010, and then, in the first full paragraph on DFE-88120, you say:

"Following this report, CEPA and Ricardo-AEA were commissioned to undertake an independent economic appraisal of the level of support that could be introduced through a RHI to encourage the roll-out of renewable heat technologies in Northern Ireland and support their 2020 target."

So that's clearly a reference back to your 2011 work. And you then say: "As part of this project, CEPA developed a project model to inform recommendations and the cost-benefit analysis for the study. The final project model used for the study report was provided to DETI as a final project deliverable along with a model handbook."

So, again, that's clearly a reference to 2011's work. There's then the figure that provides an illustration of the model structure, and then underneath that you say: "The final report concluded that an RHI should be pursued for commercial installations, due to their ability to access finance and to ensure consistency and administrative simplicity with the rest of the UK."

So that's a reference back, in 2013, to what you were concluding in 2011. So not the two options: not, "challenge fund is better", but, "you should pursue an RHI". Can you see why there may have been confusion about what precisely you were recommending?

Mr Cockburn: You say this is a proposal document [Inaudible] report?

Mr Lunny: I'll check that. It's either the proposal or the report. I have recorded it as the phase 2 report, but that can be checked.

Mr Cockburn: I mean clearly that looks inconsistent with what went before, sure. Whether that was the same person who wrote the proposal or maybe they're — even if it was the same person maybe they might've forgotten what had been written 18 months previously.

Mr Lunny: But we know that the people who worked on it in 2012 were Mr Morrow and Kaylyn Fraser.

Mr Cockburn: Sorry, this would be to the 2011 team. I think it was Paget and Iain who put together this proposal.

The page referenced as DFE-88120 is from CEPA's proposal to undertake Phase 2 of the RHI project. With the passage of time it is neither possible to confirm the authorship of that section nor the approval process prior to submission, though both Iain Morrow and Paget Fulcher were involved in the preparation of the

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proposal. On reflection, however, we consider the sentence referring to recommendations from the 2011 report might have been more accurately worded to start "Based on the final report, *DETI* concluded".

The 2011 report recommended that a Northern Ireland specific RHI should be followed if benefits from administrative simplicity and alignment with UK policies were determined to outweigh the results of the cost-benefit analysis. Given that DETI subsequently chose to adopt an RHI, we must have needed to assume DETI found those qualitative points noted in the sentence cited by Mr Lunny to outweigh the quantitative analysis.

We understand the reference to access to finance to be a reference to the issues for domestic installations that led to the 2011 recommendation *"that no final decision on the inclusion of domestic consumers is made until the GB approach is clearer."*

Casework Committee Minutes

Dr MacLean: Just while we're still on the admin costs, one of the questions that came up — I think it was in openings — was with regard to how long the administration costs would persist in the different schemes.

For the RHI, presumably, administration would continue for the initial four years and then a further 20 years beyond that. For the funding option where only four years' worth of moneys was available, then it would only have been four years' worth of administration costs for a challenge fund, with nothing ongoing unless there were conditions as you described earlier on. But if it were simply a grant that was issued, and that was it, there would be no requirement in a challenge fund for the degree of ongoing administration costs that would be committed to by embarking on the RHI route.

Mr Cockburn: Possibly, but I think it would be how it was implemented and the amount of audit and monitoring that would still have had to have taken place.

Dr MacLean: So, in your modelling of the costs that you used for each of the schemes, did you limit it to the number of years?

Mr Cockburn: I don't know, off the top of my head.

Dr MacLean: It might be helpful if you could provide confirmation as to the approach to understand, in lifetime administration costs rather than just focusing on the first four years, what the comparison might have been.

While the 2011 and 2012 models contained functionality to model administration costs, they were modelled outside of that on the understanding that the budget envelope used in the model could not be used for administration costs, as set out on p81 of the 2011 report:

"We understand that the HM Treasury funding cannot be used for administration costs, so these will need to be found separately (see section 11.2). We therefore include an additional administration cost equivalent to 10% of the subsidy spent for each option (as shown in Table 7.15 below)."

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Further detail on the approach to modelling administration costs was provided on p82 of the 2011 report:

"For administration burdens, we use the administration cost figures from the GB RHI impact assessment, of £26.61 per installation to register with the body administering the scheme, and £51.72 per quarter to report the level of heat delivered[84]. This equates to a present value cost of £3,005 per non-domestic installation and £26.61 per domestic installation (we assume that domestic installations operate under a deemed approach and so do not have to report their consumption, and that the cost of their time is comparable to that for commercial installations). We also assume that the administrative requirements will be similar for grant and RHI options. This leads to the estimated costs in Table 7.16 below.

[84] "DECC notes that this may be a monthly requirement for some larger installations. We do not expect to incentivise large industrial installations through an NI RHI."

As such, administration costs were calculated based on the number of installations, not the duration of time over which support was raised. Furthermore, administration costs were calculated in net present value terms, acknowledging that the profile of costs could be different under different scheme designs. For example, while ongoing administration costs could be lower for grant schemes, such as a Challenge fund, ongoing savings might be offset by the need for greater upfront scrutiny. Without compelling evidence that the administration cost of schemes would be different under different scheme designs, the same approach was followed for all options considered.

Addendum

Dr MacLean: Mr Lunny, sorry. There's one point here which I really struggle with. So, in June, we were projecting the lifetime subsidy costs within budget of 334 million. Seven months later, it's gone up by 111 million and it's still in budget. Now, that suggests that the budget wasn't actually a particular problem the first time round since there was more than enough headroom to accept a further 111 million, or are your references there to being within the budget limits only for the 2, 4, 7, 12 profile, but not looking at the impact on later budgets, which is obviously a very critical issue because they were going to be going on for 20 years beyond the end of the scheme?

Mr Cockburn: I think it must've been whatever the main funding scenario was, which would be put into the model. The model will have changed in terms of the population. Tariffs have changed. The take-up could be very different. The profile of that take-up, I haven't looked at, but, I mean, this is in, of course, in present value terms as well, so costs —

Dr MacLean: Whatever way, all I'm saying is that there seems to have been scope for an increase of 111 million without raising any concerns about the budget. For me there are - trying to reconcile that with your statements there about remaining in the budget limits, I can only come to immediate conclusions.

One is that there was an awful lot of headroom originally, which has been taken up, or that the reference was only to the 2, 4, 7, 12 profile and not to what was still, you rightly say, an unknown because it, at that stage, had not been finalised — what it would've looked like. So it would have been, in some respects, understandable to limit the statement to what you knew.

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What I don't know, from looking at this, is which of those two statements you're referring to. The Inquiry would be very grateful if you could clarify which of those it is.

As explained in Section 4.2 "Funding" of the 2011 report, to allow for subsidy designs that received support during their operational periods, we needed to make the assumption that funds would be made available after 2020 for ongoing support to projects. This assumption is set out on p46 of the 2011 report:

"For the NI RHI, we have assumed smooth growth in annual subsidy levels to 2020, and then subsidy as necessary beyond 2020 to provide the required on-going stream of payments for installations to 2020. This gives a present value to 2020 of £157m, and a lifetime present value of £518m (assuming funding continues to 2039 to give 20 years of support for all installations)."

The budget was just one of the constraints used in the uptake modelling, the two main others being demand-side constraints on the number of sites within each market segment looking to replace their boiler and supply-side constraints on the number of boilers that could be installed.

As noted on p80 of the 2011 report, the budget available was not generally found to be a constraint to deployment in that study:

"Turning to uptake, deployment constraints, and the fact that the rates used in the RHI options set out above may not be sufficient to incentivise all the potential for each technology, mean that not all available funding will be taken up. In practice of course, the ability to deploy renewable heat could increase, given a long-term, credible, funding stream, and so our results need to be considered with this in mind."

As such, it was possible for the lifetime subsidy costs modelled to increase between the 2011 report and the 2012 addendum.

CEPA's first statement

Mr Lunny: Well, on that point, I want to take you briefly, before I finish on this topic, just to a couple of documents, and one is your witness statement again at WIT-105036, please.

And if we look at the top half of that page and paragraph 1.6.4, and you say: "It was ultimately DETI that chose to go with an RHI rather than the competitively bid Challenge Fund. The latter would have avoided the need to second guess beneficiaries' costs and the ultimate uses of renewable heat. It would also have limited subsidies to the amount available."

And then you say:

We understand that the primary reason not to go with it was because it would have been so different to the scheme operating in GB that stakeholders would have struggled to accept it. Nonetheless, NI would not be facing the problems it is now if a Challenge Fund approach had been pursued." So, pausing there, Mr

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Cockburn, that point that "it" — the challenge fund — would also have limited subsidies to the amount available, that stark point and that stark difference —

Mr Cockburn: It —

Mr Lunny: — if you let me finish — that stark point and that stark difference between it and an administered subsidy scheme isn't pointed out in your reports.

Mr Cockburn: That is making a point of difference between a challenge fund, which was never implemented, and the RHI as it was implemented.

Mr Lunny: Yes.

Mr Cockburn: Componen— Comparas— or what we've been talking about previously was our initial working assumption in 2011 on how an administered scheme would have operated. At the end of the day, the administered scheme was not implemented in that way.

Mr Lunny: But —

Mr Cockburn: So, there's no —. I don't see any contradiction in the two.

Mr Lunny: Yes. I'm not asking you about a contradiction. I am asking you to confirm that, in none of your reports, do you say anything as stark or as clear as that statement that a challenge fund would have limited subsidies to the amount available.

Mr Cockburn: I thought we did. I thought — I think it's in one of the reports, isn't it?

Mr Lunny: Well, can you take us to the —?

Mr Cockburn: Off the top of my — no. I can come back to you on it. But I thought that was set out as one of the advantages of the —

Mr Lunny: Yes.

Mr Cockburn: — of a challenge fund in the —

The point that 'the use of a challenge fund would limit subsidies to the amount available' was clearly made by CEPA in its final report, dated 28 June 2011. With reference to page 49 and Table 5.2*: "Competitively allocated subsidies – the Challenge Fund approach*" it is stated that: "***A fixed pot of subsidy could be allocated based from the lowest bids per unit of renewable heat upwards until the pot is exhausted.***"

<u>Phase 2</u>

CEPA

Mr Lunny: And some additional technologies on the non-domestic scheme. But if we scroll down within that document to CEP-5157. And, at the very foot of the page, we have a set of conclusions, and they are:

"The overall conclusion here is that achieving the 10% renewable heat target is likely to be extremely difficult. Based on our modelling, none of the options considered will deliver the full 10%. Partly, this is because of our revised view on industrial biomass, but it also reflects the reality that there are only a few years between now and 2020, and the supply chain will take time to develop."

And if we scroll on down:

"There is also the issue of budget. DETI's annual budget in 2020 is assumed in our analysis to be £42 million. The 10% renewable heat target is 1,670GWh per year, and we assume that around 673 GWh will be delivered without subsidy. This leaves around 1,000GWh per year to be delivered by a budget of £42 million. Dividing one by the other gives an average of 4.2p per kWh.

In short, if DETI is spending more than 4.2p/kWh, it is not going to be able to afford the 10% target with its assumed budget. In that regard, we note that many of the tariffs in this report are above 4.2p. It may be that this budgetary barrier can be overcome as technologies reduce in price over time. However, at present the target looks extremely challenging from a budgetary perspective.

There are also likely to be non-financial barriers to uptake, which we consider below."

Can you cast any light on that statement, given that we saw in the 2011 and 2012 reports that, in terms, you were stating a target of 10% can actually be reached and passed by either the challenge fund or an RHI within the projected long-term budgets? Had something changed —

Mr Cockburn: I don't know. That's another point I'd have to come back to you on.

As highlighted in the excerpt cited by Mr Lunny, a revised view on industrial biomass was an important driver of why the subsidy budget was seen to be a constraint in the 2013 report in a way it had not been before.

A revised view on industrial biomass in 2013 resulted in a lower do-nothing baseline and that installations previously assumed to be able to come forward without support, would need to be accommodated in the budget. Further information on this is provided in Section 6.2 "Large biomass" on p48 of the 2013 report:

"Our previous analysis for Phase I of the NI RHI development concluded that large biomass is economic without subsidy. Feedback from stakeholders to DETI suggested that this conclusion required review and hence has been revisited as part of the Phase II analysis.

"We now consider that should DETI wish to offer a tariff for large biomass, a tariff of 0.6 p/kWh, based on a biomass pellet counterfactual, would be reasonable. The corresponding tariff in GB is 1.0p/kWh. Our use of a pellet counterfactual is based on the responses to the recent DETI consultation, which noted that the

wood supply situation in NI is substantially different to that in GB and that due to the small scale and the dispersed nature of the forestry resource the fuel chipping industry is not well developed.

"In our analysis, we have assumed that industrial sites will tend to choose CHP over heat-only biomass, and so do not count any renewable heat from industrial biomass in our results."

Closing remarks

Dame Una O'Brien: I did just want to ask you one question, if I may. And I suppose it's really to get your reflection on this. This problem that we face is — can occur in other areas of public policy, which is the, if you like, the certainty that people attach to economic models against the way things play out in the real world, and you've alluded to it in what you've said. And I'm just interested to understand where you think the responsibility lies between organisations such as CEPA, and there are other economic consultancies, to understand how people actually behave or are likely to behave, or whether you think it sits on the policy side of things.

I mean, we are all very familiar now with the concept of behavioural economics and a shift in the way economists think about these things. It seemed to me that this is a sort of classic situation of everybody being surprised at people's behaviour, but the people who behave that way aren't surprised at all that they did that, if you see what I mean. So I'd just like to know, thinking about our future and recommendations, what you think needs to change in that respect.

Mr Cockburn: I mean; I think the problem that you've identified is pretty widespread. Obviously, this particular example is a particularly difficult one, but it happens in regulation as well. And I think that sometimes policymakers and even consultants are too purist, too ivory towers and actually they don't war-game some of the assumptions a lot. They don't put themselves in the position of people who it is in their financial interest to exploit these different things. Now, you're never going to pick everything up, but I do think that mindset is something that really needs to change.

Dame Una O'Brien: So, in the industry, so to speak, that you're from, are there emerging methodologies that are trying to address these issues in —

Mr Cockburn: I am not sure it's methodologies, as such. I think it's just more, well, if you put this incentive out here —

Dame Una O'Brien: Walk around the other side of the table and pretend you are that person.

Mr Cockburn: — how would you try and exploit it?

Dame Una O'Brien: Yes, which is a common-sense thing, in many ways.

Mr Cockburn: Yes, and I think, you know, you need to do that. The other thing you can —. You know, whether it's eight-year regulatory cycles or these kinds of incentives, you need to be on top of what's happening and monitor actively; keep an eye out on the market. What would be really helpful for government is, you know, when you have poachers turning gamekeepers. Obviously, Dr MacLean, I am not accusing you of being a poacher but you have sat on the other side of the table, where I am sure you've been aware of how people have quite legitimately, from a profitability perspective, sought to benefit.

Dame Una O'Brien: Just see things earlier on.

Mr Cockburn: Yes. And I —

Dame Una O'Brien: OK. Well, certainly, if CEPA have any thoughts they want to contribute to us on that front, which is how can we systematically address these shortcomings for the future, then I'm sure we would be very interested to hear that.

Given the answer to this is more involved than the other points, in order to properly address Dame Una's question, CEPA proposes to give this further consideration before responding fully in early 2018.

I do hope that this information answers all the outstanding questions. However, if I have overlooked anything, or if you would like clarification about any of the matters addressed in this letter, please do not hesitate to contact me.

Yours sincerely,

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Director

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